

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Proposed Action: Approve Drilling Permit (Form 22)

Operator: Denbury Onshore, LLC

Well Name/Number: Minnelusa 4

Location: NW NE Section 15 T8S R54E

County: Powder River, **MT;** **Field (or Wildcat)** Bell Creek

Air Quality

(possible concerns)

Long drilling time: No, 10 to 15 days drilling time.

Unusually deep drilling (high horsepower rig): No, double drilling rig, to drill a 7,000' TVD/MD well in the Minnelusa for a BHP monitoring well. Possible pressure in the Muddy, Minnelusa may be under pressure.

Possible H2S gas production: None anticipated.

In/near Class I air quality area: No Class I air quality area in the area of review.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns – using a double derrick drilling rig to drill to 7,000' TVD/MD.

This is a BHP monitoring well.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, light completion brine will be used (1,000'-7,000') in conjunction with a freshwater system. Freshwater will be used on the surface casing hole, rule 36.22.1001.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainage is an ephemeral drainage to Belle Creek, about 3/10 of a mile to the southwest. Belle Creek (the creek) is located 1.5 miles to the southwest.

Water well contamination: None, closest water well is about 3/10 of a mile to the northwest. Depth of this stock water well is between 350'. This well will drill surface hole with freshwater to 1,000' and will set and cement 9 5/8" surface casing to protect groundwater and to cover the Fox Hills aquifer, rule 36.22.1001.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No Class I stream drainages in the area of review.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☒ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 1,000' of surface casing cemented to surface adequate to protect freshwater zones.

Also, fresh water mud systems to be used, rule 36.22.1001.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: No, crossings anticipated.

High erosion potential: Yes, possible high erosion due to a moderate cut, up to 18.4' and a moderate fill, up to 19.2'.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive, unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, 270'X400' location size required.

Damage to improvements: Slight, surface use is grass grazing land.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other _____

Comments: Access will be over Boyes Road South and existing lease road. Cuttings will be buried in the lined reserve pit. Freshwater drilling fluids and residual oil will be hauled to Class II disposal. Pit will be allowed to dry and backfilled with subsoils and clays. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: No residence within a ½ mile radius from this location. The town of Belle Creek is located about 1.25 miles to the southwest.

Possibility of H2S: None anticipated.

Size of rig/length of drilling time: double drilling rig/short 10 to 15 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing and operational BOP equipment should mitigate any problems. 3,000 psig annular and double ram BOP, rule 36.22.1014. No concerns.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Threatened or endangered species in Powder River County is the Black-Footed Ferret. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH Tracker website lists two (2) species of concern. They are as follows: Ferruginous Hawk and Black-tailed Prairie Dog.

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Screening/fencing of pits, drillsite

☐ Other: _____

Comments: Surface is private grazing land. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified.

Mitigation

☐ avoidance (topographic tolerance, location exception)

☐ other agency review (SHPO, DSL, federal agencies)

☐ Other: _____

Comments: Surface use is private grazing land. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

☐ Substantial effect on tax base

☐ Create demand for new governmental services

☐ Population increase or relocation

Comments: A Re-entry oil well in an existing oil field, Bell Creek Oil Field. No concerns

Remarks or Special Concerns for this site

Well is a 7,000'TVD/MD Minnelusa in the Bell Creek Oil Field.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/John Gizicki

(title:) Compliance Specialist

Date: September 12, 2014

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Powder River County water wells

(subject discussed)

September 12, 2014

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES,

Powder River County

(subject discussed)

September 12, 2014
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T8S R54E
(subject discussed)

September 12, 2014
(date)

Montana Cadastral Website
(Name and Agency)
Surface Ownership and surface use Section 15 T8S R54E
(subject discussed)

September 12, 2014 (date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____